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DESCRIPTION

FIELD OF THE INVENTION

[0001] This invention relates to a method for displaying information such as messages, for example warning messages or advertisements, on railway tracks.

BACKGROUND

[0002] It is useful to provide warnings to railway passengers and railway workers, for example regarding danger regarding train traffic and high power-electricity.

[0003] Suicides and suicide attempts at railway tracks is a serious problem. It is previously known to post signs with messages that are intended to prevent suicide attempts next to railroad tracks. However, suicides still claim too many lives. There has also been attempts with sending text messages to persons that are thought to be in risk for making suicide attempts (Berrouiguet et al Psychiatry Res. 2014 Jul 30;217(3):154-7). This suggests that it may be advantageous to rotate the messages so that sometimes a new message is displayed.

[0004] Advertisers are in need of new methods for conveying advertising messages. It is of particular interest to provide advertising messages at locations where people wait.

[0005] It is useful if such messages can be provided in a manner that is easy to be removed or replaced.

[0006] JP2001195001 shows how stiff plastic signs can be permanently attached to railway rail with an epoxy adhesive. The goal of JP2001195001 is to make sure that a sign is fixed to the rail in a long-lasting manner, since the sign may provide information about time for replacement. A problem with such stiff signs (made from fiber reinforced plastic) that are attached with epoxy adhesive is that the sign or the adhesive may crack due to movements caused by passing trains.

[0007] GB968487 A discloses a magnetically adherent flexible plate that can be attached to curved surfaces or to surfaces including angles or corners for temporary affixation to vehicles, for example to railway rolling stock.

SUMMARY

[0008] It is an object of the invention to address at least some of the issues outlined above. No one has, as far as we are aware, contemplated to provide easily movable signs attached to railroad rail. JP2001195001 is concerned with permanently attached and weather resistive signs. One reason for this is that it is counter intuitive to provide something movable (other than trains) on railroad rail, due to the immense forces caused by passing trains and also due to security reasons since removal of some signs, for example a sign that states the time for replacement of the rail, may cause danger.

[0009] The present invention is disclosed in the attached indepdent claims.

[0010] According to a first aspect of the invention there is provided the use of a flexible magnetic strip for displaying a message on a piece of railway rail, the magnetic strip comprising a message surface displaying said message such that, when the magnetic strip is attached to said piece of railway rail by magnetic adhesion, the said message is visible. The message may comprise advertising.

[0011] The invention provides several advantages. One advantage is that a removable message can be displayed on a railway track. The message is easy to attach. No glue or other fastening means are needed. The flexible strip is also easy to remove. A flexible magnetic strip is easier to peel away than a rigid magnetic strip, such as for example a sheet metal strip. The flexible strip is also easy to attach to curved tracks and to the curve where the web of the railway rail meets the foot.

[0012] Since the strip is easy to attach and detached it is easy to replace or rotate messages. This is useful in several ways. The strip with can for example be placed at a location where there is on-going work on or next to the railroad, such as construction work, rail maintenance work, etc. Such workplaces may be mobile in the sense that they move along the railroad track. Therefore it would be useful to move such messages in a convenient matter.

[0013] Also, when the flexible magnetic strip is used for advertising, advertising campaigns can be updated in a convenient matter by replacing the strip.

[0014] Importantly, suicide-preventing messages can be altered in orderto alert persons in the risk of making suicide attempts.

[0015] A surprising advantage is that the invention solves the problem of cracking adhesive. The flexible magnetic strip is not attached with an adhesive that cracks.

[0016] In a preferred embodiment the flexible magnetic strip is attached to the web of the piece of railway rail. An advantage is that the message surface will be approximately vertical, thus making it easy to read. The flexible magnetic strip may be attached to only the web of the railway rail.

[0017] The flexible magnetic strip may be attached to the lower part of the web so that the lower edge of the flexible magnetic strip is substantially adjacent to the foot of the railway track. An advantage with this is that the message is obscured as little as possible by the head of the railway rail.

[0018] The message may be attached to at least a part of the web and at least a part of the foot of the piece of railway rail, whereby the strip is bent in order to follow the shape of the rail. This has the advantage of providing a vertical message surface as well as an almost horizontal message surface, and also enabling a wider message surface.

[0019] The piece of railway rail may be adjacent to a passenger platform, and where the flexible magnetic strip may be attached on the side of the railway rail that is facing the platform. This provides the advantage of providing the message to a place where people are waiting.

[0020] In one embodiment the message surface displays a message adapted to prevent suicide attempts.

[0021] The invention is particularly useful to provide text, because it provides a long horizontal message surface.

[0022] The message may be provided on the message surface with different methods. The message may be printed or embossed on the flexible magnetic strip. The message surface may comprise a powered lighting means for displaying a lit message. The flexible magnetic strip may comprise a battery for powering the powered lighting means. The flexible magnetic strip may comprise a solar cell for powering the powered lighting means or for charging the battery. The solar cell may be provided on the message surface.

[0023] The flexible magnetic strip may have any suitable length. The length may for example be from 5 cm to 300 cm, or from 30 cm to 300 cm or from 75 cm to 300 cm, or from 100 cm to 300 cm, or from 200 cm to 300 cm. It is difficult to place long signs at a desired angle because a small error angle results in a large set off at the edges. Therefore it is particularly useful if the sign is easy to correct during placing. Therefore the sign may preferably have a length of from 30 cm to 300 cm.

[0024] The flexible magnetic strip may have any suitable width, such as for example from 3 cm to 12 cm. A preferred width is from 3 cm to 7 cm, in particular from 4 cm to 6 cm.

[0025] In a second aspect there is provided a method for providing a message on a railway track comprising the step of placing a flexible magnetic strip that is used according to the first aspect of the invention on a piece of railway rail.

[0026] In a third aspect of the invention there is provided a piece of railway track with a flexible magnetic strip attached to it, the flexible magnetic strip comprising a message surface displaying a message such that the said message is visible.

[0027] In a fourth aspect of the invention there is provided railway rail (1) next to a passenger platform (7) characterized in that a flexible magnetic strip (5) with a message surface (6) is attached to the railway track (1) in a manner such that message surface (6) is visible from the passenger platform (7).

BREIF DESCRIPTION OF DRAWINGS

[0028] The invention will now be described in more detail by means of exemplary embodiments and with reference to the accompanying figures in which:

Fig. 1 is a drawing of a piece of railway rail with a flexible magnetic strip according to the invention.

Fig. 2 is a drawing of a train station.

Fig. 3 shows a piece of flexible magnetic strip.

Figs. 4, 5 and 6 show cross sections of flexible magnetic strips.

DETALIED DESCRIPTION

[0029] With reference to Fig. 1, the profile of railway rail 1 has three distinct parts: the foot 2 that rests on the ground, the head 3 on which the train wheels run, and the web 4 that connects these two parts.

[0030] Flexible magnetic strips 5 are known as such and have different applications. They are used for example to display messages on whiteboards, refrigerator doors or on the body of cars. For example, a flexible magnet strip can be used for "student driver"-signs that can be temporarily attached to the body of a car.

[0031] Flexible magnetic strips 5 frequently consist of magnetic particles suspended in a suitable polymer matrix. The polymer may for example be rubber or polyethylene. The magnetic particles may comprise ferrite or a rare earth metal. The flexible magnetic strip 5 can be produced by extrusion or calendaring, or a combination of these two methods. Flexible magnetic strips 5 can be formed by laminating several layers of material of which one layer provides a printable surface or a colored surface. This layer may form the message surface 6.

[0032] The flexible magnetic strip 5 may be made of a piece of polymer material to which magnets are attached. The magnets are then preferably attached to the side that is opposite to the message surface 6.

[0033] With reference to Fig 1, a flexible magnetic strip 5 with a message is placed on the railway rail 1. Suitably the flexible magnetic strip 5 is placed on the web 4 or on the upper surface 12 of the foot 2 of the railway rail 1. The flexible magnetic strip 5 may be such that it attaches to both the web 4 and the upper surface 12 of the foot 2 or parts thereof. Preferably the flexible magnetic strip 5 is attached to the web 4 of the railway rail as shown in Fig 1.

[0034] The flexible magnetic strip 5 is preferably placed on the rail 1 so that the message surface 6 of the flexible magnetic strip 5 can be viewed by a person 8. The person 8 may be a person 8 standing on a passenger platform 7 (Fig. 2). Preferably the piece of railroad rail 1 is a piece of railroad rail 1 that forms a part of railroad tracks (as opposed to railroad rail in stock, for example).

[0035] The flexible magnetic strip 5 in Fig. 1 has a rectangular shape. However, the flexible magnetic strip 5 can have any suitable shape. For example it may be oval or even circular, as long as it fits on the piece of railroad track 1.

[0036] The message surface 6 of the flexible magnetic strip 5 is provided with a message. The message can comprise any shape, symbol, figure, text or number that is to be conveyed to persons 8 in the vicinity of the railroad rail 1. Thus, the message can comprise any type of information.

[0037] In one embodiment the message surface 6 displays a message adapted to prevent suicides or suicide attempts. Suitably the message can include the telephone number for a suicide prevention helpline. Examples of suitable messages are "If you need to talk call xx-xxxxxxx" "There is help". "Suicide prevention hotline phone xx-xxxxx". Further examples can be found in Berrouiguet et al Psychiatry Res. 2014 Jul 30;217(3):154-7) and references therein.

[0038] The message can be provided on the message surface 6 in any suitable manner. The message can for example be printed on the surface of the flexible magnetic strip 5. The message may also be embossed on the message surface 6. The message may also be conveyed by a lighting means, such as a LCD display or LED-lighting. In one embodiment the flexible magnetic strip comprises a powered lighting means. For example the message surface 6 is powered and can emit light. For example, the message surface can comprise a LCD display for displaying a message, or LED lightning. In that case the message surface 6 may be powered by solar cells integrated on the message surface 6. The flexible magnetic strip may have light sensor. The light sensor switches on or off the lighting means depending on the ambient lighting conditions.

[0039] As shown in Fig. 2 the flexible magnetic strip 5 is, in one embodiment, placed on railroad rail 1 in the vicinity of a passenger platform 7. The passengers 8 waiting for the train can then observe the message on the message surface 6 while waiting. Fig 2 shows how passengers 8 waiting on a platform 7 on at different distances from the edge 11 of the platform 7 can observe the message surface 6 of flexible magnetic strip 5 on the railroad rail 1 forming railroad tracks. Preferably the flexible magnetic strip 5 is placed on the side of the railroad rail that is visible from the platform 7.

[0040] Apart from use at passenger platforms 7, a flexible magnetic strip 5 may be used to label railroad rail with messages for railroad workers, etc., car drivers at railroad crossings, etc. This may be particularly useful when work is carried out along the railroad tracks, and information may have to be provided and removed at short notice.

[0041] It may be advantageous to place the flexible magnetic strip 5 on the lower part of the web 5. In that way it may be possible to avoid that a part of the message is obscured by the head 3 of the rail, in particular to persons standing close to the railroad rail 1.

[0042] Fig. 3 shows an example of a magnetic flexible strip 5, with the sample text "Text" on the message surface 6. The width w of the flexible magnetic strip 5 is as wide as possible (to provide as large letters as possible) while still being narrow enough to fit in and attach to the web 4 of the railway rail 1. Typically the web 4 has a width of from 3 cm to 8 cm and the flexible magnetic strip 5 suitably has a width that is smaller than this distance. A suitable width of the flexible magnetic strip 5 is from 3 cm 7 cm, in particular from 4 cm to 6 cm. When the flexible magnetic strip 5 is to attach to both the web 4 and the foot 2 the strip 5 can be up to 20 cm wide, more preferably 15 cm wide and most preferably 12 cm wide.

[0043] The length of the flexible magnetic strip 5 can be adapted to the message that is to be displayed. A short strip can be used for conveying short texts such as a brand name or company name, or images or symbols. Longer strips can be used for longer texts. However, it may be difficult to handle and attach strips that are longer than 300 cm. A suitable length is from 5 cm to 300 cm, where a length of from 30 cm to 100 cm is more preferred. The length of the strip may also be from 100 cm to 300 cm or from 200 cm to 300 cm.

[0044] The thickness of the flexible magnetic strip 5 can be a few millimeters, for example from 1 mm to 5 mm.

[0045] The strength of the magnetic field in the flexible magnetic strip 5 is chosen so that the flexible magnetic strip 5 adheres to the railway rail 1 but weak enough so that the flexible magnetic strip 5 can be peeled off by hand when needed, for example when an advertising or information campaign is terminated.

[0046] Figs. 4, 5 and 6 shown cross sections of flexible magnetic strips 5 cut along the line A-A in Fig. 3. The cross section of the flexible magnetic strip 5 may be rectangular as seen in Fig. 4 but may also have other profiles. For example the message surface 6 may be curved as seen in Fig 5. Fig. 6 shows an embodiment where the message surface 6 is angled toward the observer on a platform 7 or an observer standing on the ground next to the rail road rail 1. In Fig. 6 the upper edge 9 of the flexible magnetic strip 5 is thinner than the lower edge 10.

[0047] While the invention has been described with reference to specific exemplary embodiments, the description is in general only intended to illustrate the inventive concept and should not be taken as limiting the scope of the invention. The invention is generally defined by the claims.

REFERENCES CITED IN THE DESCRIPTION

Cited references

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Patent documents cited in the description

- JP2001195001B [0006] [0006] [0008]
- GB968487A [0007]

Non-patent literature cited in the description

- **BERROUIGUET et al.**Psychiatry Res., 2014, vol. 217, 3154-7 [0003] [0037]

Danske krav

Metoder og enheder til reklame på jernbaneskinner

1. En fremgangsmåde til at vedhæfte en meddelelse eller en annonce på et jernbanespor, hvor en profil af jernbanesporet (1) har tre forskellige dele: en fod (2), som hviler på jorden, en krone (3), hvorpå toghjul kører, og en stamme (4), der forbinder disse to dele; omfatter trinnet at fastgøre en fleksibel magnetisk strimmel (5), der omfatter en meddelelsesflade (6), der viser en meddelelse på i det mindste en del af stamme (4) og i det mindste en del af foden (2) af et stykke jernbanespor (1), hvor den fleksible magnetstribe er bøjet for at følge formen af jernbanesporet.

2. Fremgangsmåden ifølge krav 1, hvor meddelelsesfladen (6) er fastgjort til et stykke jernbanespor (1), der støder op til en passagerperron (7) på den side af jernbanesporet, der vender mod perronen.

3. Fremgangsmåde ifølge krav 1, hvor meddelelsen er blevet tilpasset til at forhindre selvmord eller selvmordsforsøg.

4. Fremgangsmåde ifølge krav 1, kendetegnet ved, at den fleksible magnetstribe (5) omfatter en lyskilde, der drives af elektricitet.

5. Fremgangsmåde ifølge krav 1, hvor meddelelsesfladen består af et LCD-display til visning af en meddelelse.

6. Fremgangsmåde ifølge krav 1, hvor meddelelsens overflade består af LED-belysning.

7. Fremgangsmåde ifølge krav 1, hvor meddelelsen eller annoncen er trykt på overfladen af den fleksible magnetstribe.

8. Fremgangsmåde ifølge et af de foregående krav, kendetegnet ved, at den fleksible magnetstribe er rektangulær.

9. Fremgangsmåde ifølge krav 1, kendetegnet ved, at længden af den fleksible magnetstribe er mellem 30 og 300 cm.

10. Fremgangsmåde ifølge krav 1, kendetegnet ved, at den fleksible magnetstribe er op til 20 cm bred.

11. En den af et jernbanespor med en fleksibel magnetstrimmel fastgjort dertil ifølge et hvilket som helst af kravene 1 til 10.

12. Et jernbaneskinne (1) med en fleksibel magnetstrimmel ifølge krav 2 fastgjort til den.

13. Et jernbaneskinne (1) ifølge krav 12, hvor meddelelsesfladen (6) viser en meddelelse, som er tilpasset til at forhindre selvmordsforsøg.

DRAWINGS

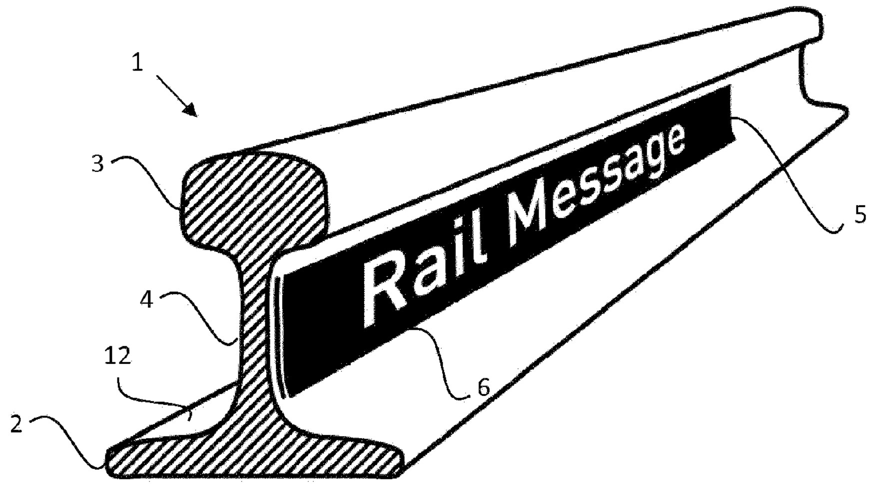

Fig. 1

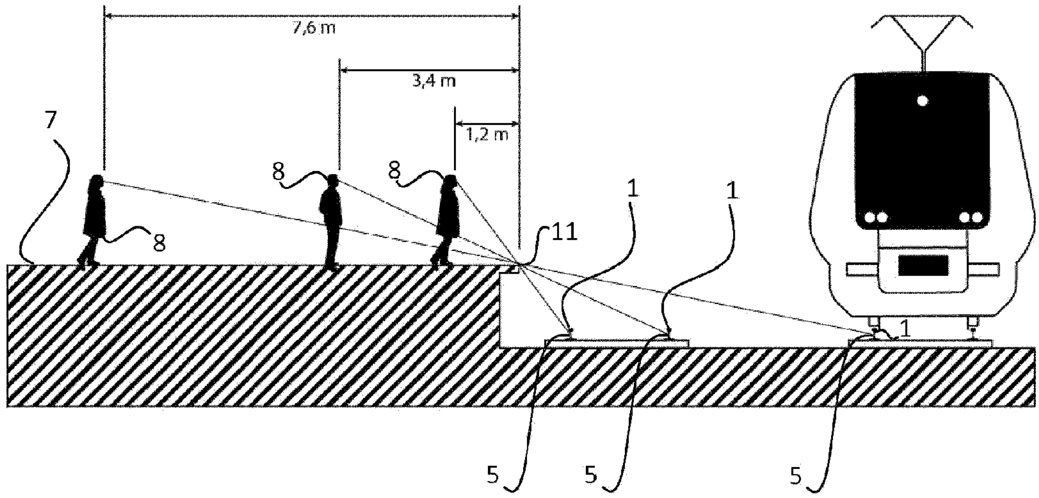

Fig. 2

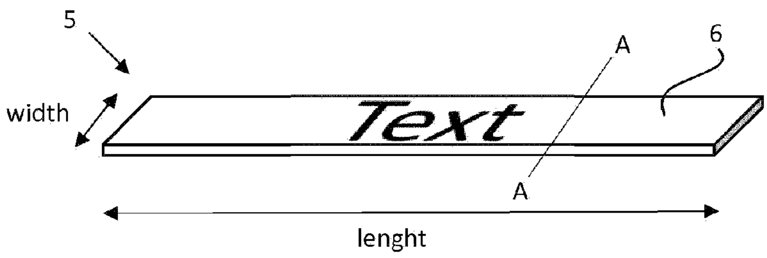

Fig. 3

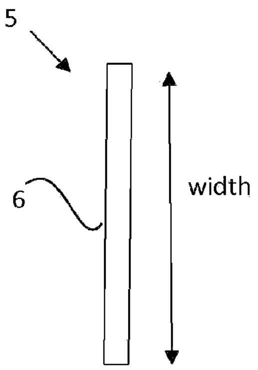

Fig. 4

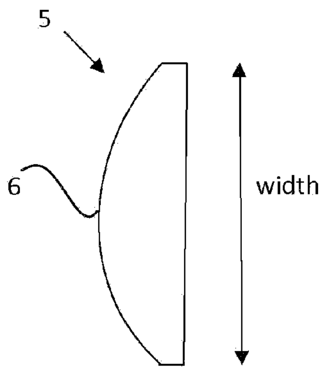

Fig. 5

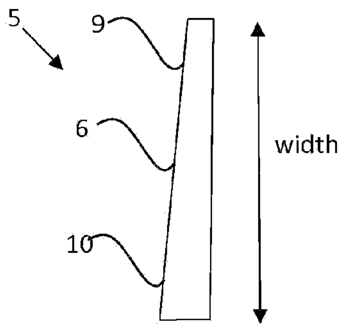

Fig. 6